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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/054,551      | 01/22/2002  | Ralf Dohmen          | 2-3-4-2-2-2         | 7258             |

7590 05/03/2006

Docket Administrator (Room 3J-219)  
Lucent Technologies Inc.  
101 Crawfords Corner Road  
Holmdel, NJ 07733-3030

EXAMINER

WONG, LINDA

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2611

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

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|------------------------------|-------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/054,551 | Applicant(s)<br>DOHMEN ET AL. |  |
|                              | Examiner<br>Linda Wong        | Art Unit<br>2611              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4 and 6-11 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1,4,6 and 9 is/are rejected.
- 7) ☒ Claim(s) 3,7 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see Applicant's Arguments, filed 2/6/2006, with respect to the rejection(s) of claim(s) 1 under Wang et al, "Computer Communications" and Way et al have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Bouillet et al (US Patent No.: 6490007) in view of "Computer Communications", IEEE Vol. 2, No. 4, August 1979 and further in view of Way et al (US Patent No.: 6583903).

### ***Claim Objections***

2. **Claim 1** recites the limitation "the history". There is insufficient antecedent basis for this limitation in the claim.
3. **Claim 1** recites the limitation "the actual sampled bit". There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 112***

4. **Claim 6** is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the

association between the threshold decision circuit and the other components mentioned.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1,4,9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Way et al (US Patent No.: 6583903) in view of "Computer Communications", IEEE Vol. 2, No. 4, August 1979.

a. **Claim 1**, Way et al discloses the following:

- i. receiving at the receiver a data stream (Fig. 10, labels 1024,1022),
- ii. correcting bits in the data block using an error correction means (Fig. 10, label 1072 and Col. 6, lines 40-42),
- iii. measuring a bit error rate (BER) from the number of corrected bits in the data block (Fig. 10, label BER and Col. 6, label 40-42),
- iv. changing a predetermined equalization parameter (Fig. 11, labels 1110,1140 and 1076),
- v. measuring the bit error rate (BER) after change of the predetermined parameter (Fig. 10, label 1052 and 1076),

- vi. changing the predetermined equalization parameter (Fig. 11, labels 1076, 1140, 1110).
  - vii. Regarding the limitation “the history of the occurring bits preceding the actual sampled bit to adjust the threshold in direction and amount”, Way et al suggests such a limitation by providing an adjustable threshold using a “latch or register” for “hold[ing] the set of binary bits most recently sent along control linkage 1135”. (Col. 14, lines 17-24)
  - viii. Regarding the limitation “adjusting the threshold in direction and amount”, Way et al states adjusting the threshold in “proportion to the value of the set of binary bits held”, which suggests that the threshold is proportioned or adjusted in direction and amount based on the preceding bits. (Col. 14, lines 17-24)
  - ix. Regarding the limitation changing the predetermined equalizing parameter until an optimum is reached, Way et al discloses adjusting the threshold voltage based on the setpoint controller (Fig. 11, label 1140 and 1110), which is detected to maintain the optimum setpoint settings to minimize BER. (Col. 14, lines 57-62)
- b. **Claim 1**, Way et al fails to disclose the following limitation:
- i. a received data stream comprised of data blocks with an information and error correction section. Although Way et al fails to disclose such a limitation, IEEE published an article that describes a data packet comprised of data blocks containing information and error correction. (Fig. 11) It

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would be obvious to one skilled in the art to use a data stream comprised of information and error correction so to detection errors within the stream more easily.

- c. **Claim 4**, Bouillet et al discloses converting the incoming data into digital form (Fig. 1, label 19) and error correcting the digital form (Fig. 1, label 44).

Although Bouillet et al does not explicitly disclose slicer or subdividing the digital form into blocks, it is well known in the art for an equalizer to comprise a slicer. It would be obvious to one skilled in the art to incorporate a slicer in the equalizer so to effectively and accurately correct channel distortions. (Bouillet et al, Col. 2, lines 53-54)

- d. **Claim 9**, Way et al discloses adjusting the threshold value. (Col. 14, lines 17-24)

6. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Way et al (US Patent No.: 6583903) in view of Gaudreau (US Patent No.: 5828422).

- a. **Claim 6**, Way et al discloses the following:

- i. receiving an analog data (Col. 13, lines 15-27),
- ii. a threshold decision circuit (Fig. 11, label 1110),
- iii. a clock recovery circuit for converting the analog data into digital data (Col. 13, lines 15-27),
- iv. a shift register for passing the digital data stream through the receiver (Col. 14, lines 17-30),

- v. an error correction (Fig.10, label 1070) a feedback loop for adapting parameters of the receiver equalizer (Fig. 11, label 1076,1140 and 1110),
  - vi. wherein the feedback loop causes the detector set point controller to adjust the threshold using a "latch or register" for "hold[ing] the set of binary bits most recently sent along control linkage 1135". (Col. 14, lines 17-24)
  - vii. Regarding the limitation adjusting the threshold in direction and amount, Way et al suggests such a limitation by disclosing adjusting the threshold in "proportion to the value of the set of binary bits held", which indicates that the threshold is proportioned or adjusted in direction and amount based on the preceding bits. (Col. 14, lines 17-24)
- b. **Claim 1**, Way et al fails to disclose the following:
- i. a loop-up table based on the BER and the shift register, and
  - ii. determining the bit error rate, and
  - iii. the shift register comprises tap means.
- c. **Claim 1**, Although Way et al fails to disclose the above limitation, Gaudreau discloses the following:
- i. a lookup table for adjusting the threshold based on the bit shifted in the shift register (Fig. 1, label 22, 14) and the error found in the bits. (Col. 3, lines 14-27) It would be obvious to one skilled in the art to incorporate a look up table to store the error and correction factor as disclosed by Gaudreau (Col. 1, lines 64-67) to provide continuous access to corrected errors similar to the errors found previously.

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- ii. Regarding the limitation determining the bit error rate, Gaudreau discloses determining the error found is determined based on the bits in the sample. (Col. 3, lines 19-21) It would be obvious to one skilled in the art to calculate the BER rate as opposed to the error function as determined by Gaudreau based on design choice and to determine the number of errors within the sample so to effectively correct those errors detected using the equalizer.
- iii. Regarding the limitation tap means in the shift register, the shift register can be build as deemed by the designer, thus the shift register, depending on the decision of the designer, can comprise taps.

#### ***Allowable Subject Matter***

- 7. **Claims 3,7 and 8** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
- 8. **Claims 10 and 11** are allowable over prior art.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

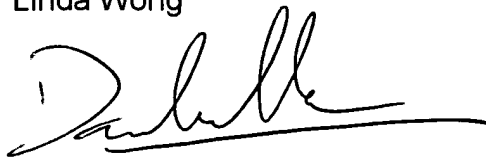
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Linda Wong

A handwritten signature in black ink, appearing to read 'Linda Wong', with a long horizontal flourish extending to the right.

**DACHA  
PRIMARY EXAMINER**